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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,158	07/14/2003	Mohammad A. Kalbassi	06258 USA	9509

23543 7590 09/24/2004

AIR PRODUCTS AND CHEMICALS, INC.
PATENT DEPARTMENT
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EXAMINER

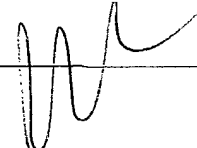
DOERRLER, WILLIAM CHARLES

ART UNIT	PAPER NUMBER
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3744

DATE MAILED: 09/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/620,158	Applicant(s) KALBASSI ET AL. 	
	Examiner William C Doerler	Art Unit 3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7-14-03, 2-17-04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Priority

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Europe on 7-30-2002. It is noted, however, that applicant has not filed a certified copy of the European application as required by 35 U.S.C. 119(b).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-27,29 and 30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1,29 and 30 claim that flow will be equal, "for all angles of tilt". All angles of tilt will include 90 degrees, at which point the flow will not occur. It is noted that the first and second predetermined maximum are not defined. This enables any system with similar structure to meet the claim since the predetermined maximums could be near infinite. Claim 16 is self dependent. Claim 21 cannot function as claimed. Claim 20 has the secondary distributor being fed through openings in the bottom of the primary distributor. If the primary distributor is outside the column, as claimed in claim 21, conduits must be claimed between the primary and secondary distributors, since otherwise the secondary distributor is also outside the column. In claim 8, "the or" in line 2 is unnecessary since claim 7 from which it depends claims multiple secondary

distributors. The claims not specifically mentioned depend from unclear claims, so they are unclear by their association.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4,6-10,12,19,20,25 and 28-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Meier.

Meier shows a liquid distributor for a distillation column with a primary distribution zone 4 which feeds a plurality of secondary distributors 6. The secondary distributors each have a larger area than the primary distributor. Because the device of Meier is disclosed to resist fluid maldistribution due to tipping it is seen as meeting the first and second predetermined maximum claimed since a first and second maximum will exist for Meier and applicants' have not further limited the maximums, other than saying that they exist. The equation of claim 3 is seen to be inherent for any flow of liquid and vapor through a distributor which is tilted. In regard to claim 10, see figure 3 which shows a core distributor surrounded by other distributors. In regard to claim 12, see reference numeral 11 in figure 4.

Claims 1-4,6-9,11,14,17,19,20,25,29 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Armstrong et al.

Armstrong et al show a liquid distributor for a distillation column with a primary distribution zone 3 which feeds a plurality of secondary distributors 4. The secondary distributors each have a larger area than the primary distributor. Because the device of Armstrong et al is disclosed to resist fluid maldistribution due to tipping it is seen as meeting the first and second predetermined maximum claimed since a first and second maximum will exist for Armstrong et al and applicants' have not further limited the maximums, other than saying that they exist. The equation of claim 3 is seen to be inherent for any flow of liquid and vapor through a distributor which is tilted. The chess board arrangement is shown in figure 2. In regard to claim 17, the open secondary distributors are in fluid communication with each other since a gas can travel between the different sections and a gas is a fluid.

Claims 1-3,5,12,13,17,18,20,22-27,29 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Darredeau '053.

Darredeau '053 shows a liquid distributor for a distillation column with a primary distribution zone 13 which feeds a secondary distributor 14. Because the device of Darredeau is disclosed to resist fluid maldistribution due to tipping it is seen as meeting the first and second predetermined maximum claimed since a first and second maximum will exist for Darredeau and applicants' have not further limited the maximums, other than saying that they exist. The equation of claim 3 is seen to be inherent for any flow of liquid and vapor through a distributor which is tilted. In regard to claim 17, the open secondary distributors are in fluid communication with each other since a gas can travel between the different sections and a gas is a fluid. The

coverages claimed in claims 22 and 23 are shown in figures, but not discussed in the written description. A redistributor is shown in figure 1 as 1B. The last three lines of column 4 discuss means for remixing the liquid. This is seen as the packing material claimed in claims 12 and 13.

Claims 1-5,17,18,20,22,23,25-27,29 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Darredeau et al '138.

Darredeau et al '138 shows a liquid distributor for a distillation column with a primary distribution zone 3 which feeds a secondary distributor 4. Because the device of Darredeau et al is disclosed to resist fluid maldistribution due to tipping it is seen as meeting the first and second predetermined maximum claimed since a first and second maximum will exist for Darredeau et al and applicants' have not further limited the maximums, other than saying that they exist. The equation of claim 3 is seen to be inherent for any flow of liquid and vapor through a distributor which is tilted. In regard to claim 17, the open secondary distributors are in fluid communication with each other since a gas can travel between the different sections and a gas is a fluid. The coverages claimed in claims 22 and 23 are shown in figures, but not discussed in the written description. A redistributor is shown in figure 4 as 1B.

Claims 1-4,6-8,10,17,18,20,22,23 and 25-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Robbins.

Robbins shows a liquid distributor for a distillation column with a primary distribution zone 25 which feeds a plurality of secondary distributors C. The secondary distributors each have a larger area than the primary distributor. Because the device of Robbins is

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disclosed to resist fluid maldistribution due to tipping it is seen as meeting the first and second predetermined maximum claimed since a first and second maximum will exist for Armstrong et al and applicants' have not further limited the maximums, other than saying that they exist. The equation of claim 3 is seen to be inherent for any flow of liquid and vapor through a distributor which is tilted. In regard to claim 17, the open secondary distributors are in fluid communication with each other since a gas can travel between the different sections and a gas is a fluid. A redistributor is shown in figure 5.

Allowable Subject Matter

Claims 15 and 16 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

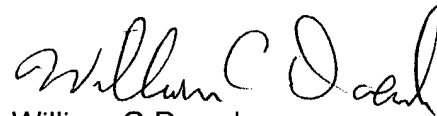
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lockett et al and Bartlok show liquid distributors for distillation columns having primary and secondary distributors.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C Doerrler whose telephone number is (703) 308-0696. The examiner can normally be reached on Monday-Friday 6:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Denise Esquivel can be reached on (703) 308-2597. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



William C Doerrler
Primary Examiner
Art Unit 3744

WCD